

Document made available under the Patent Cooperation Treaty (PCT)

International application number: PCT/CA05/000125

International filing date: 03 February 2005 (03.02.2005)

Document type: Certified copy of priority document

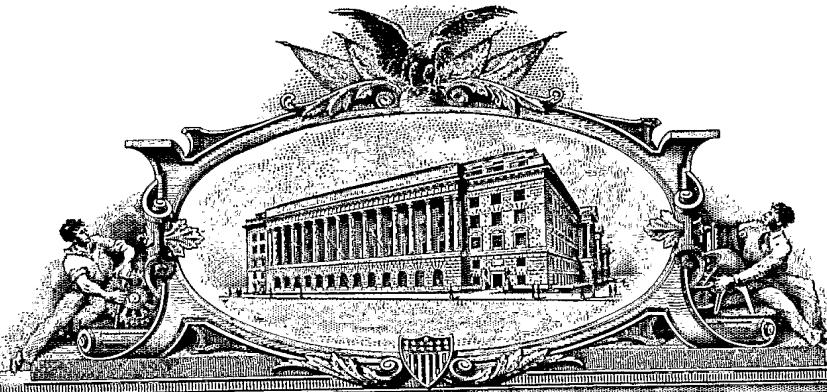
Document details: Country/Office: US
Number: 60/541,038
Filing date: 03 February 2004 (03.02.2004)

Date of receipt at the International Bureau: 27 April 2005 (27.04.2005)

Remark: Priority document submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b)



World Intellectual Property Organization (WIPO) - Geneva, Switzerland
Organisation Mondiale de la Propriété Intellectuelle (OMPI) - Genève, Suisse



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

March 01, 2005

THIS IS TO CERTIFY THAT ANNEXED HERETO IS A TRUE COPY FROM
THE RECORDS OF THE UNITED STATES PATENT AND TRADEMARK
OFFICE OF THOSE PAPERS OF THE BELOW IDENTIFIED PATENT
APPLICATION THAT MET THE REQUIREMENTS TO BE GRANTED A
FILING DATE UNDER 35 USC 111.

APPLICATION NUMBER: 60/541,038

FILING DATE: February 03, 2004

PCT/CA05/00125

By Authority of the
COMMISSIONER OF PATENTS AND TRADEMARKS



Trudie Wallace
TRUDIE WALLACE
Certifying Officer

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53 (c).

INVENTOR(S)

Given Name (first and middle [if any]) Derek J.	Family Name or Surname Ritz	Residence (City and either State or Foreign Country) Ancaster, Ontario, Canada
--	------------------------------------	--

 Additional inventors are being named on the _____ separately numbered sheets attached hereto**TITLE OF THE INVENTION (500 characters max)****SUPPLY CHAIN MANAGEMENT SYSTEM**Direct all correspondence to: **CORRESPONDENCE ADDRESS** Customer Number 1059

OR

 Firm or Individual Name

Address

Address

City

State

ZIP

Country

Telephone

Fax

U.S. PTO
5535 60/541036

020304

ENCLOSED APPLICATION PARTS (check all that apply)

- | | | |
|---|-----------|--|
| <input checked="" type="checkbox"/> Specification Number of Pages | <u>23</u> | <input type="checkbox"/> CD(s), Number |
| <input type="checkbox"/> Drawing(s) Number of Sheets | | <input type="checkbox"/> Other (specify) |
| <input checked="" type="checkbox"/> Application Data Sheet. See 37 CFR 1.76 | | |

METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT

- | | |
|---|------------------------|
| <input checked="" type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. | FILING FEE AMOUNT (\$) |
| <input checked="" type="checkbox"/> A check or money order is enclosed to cover the filing fees | |
| <input type="checkbox"/> The Director is hereby authorized to charge filing fees or credit any overpayment to Deposit Account Number: <u>022095</u> | |
| <input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached. | <u>80.00</u> |

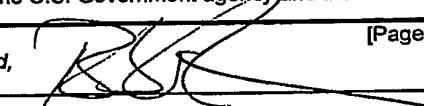
The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

- No.
 Yes, the name of the U.S. Government agency and the Government contract number are: _____.

[Page 1 of 2]

Date

February 2, 2004

Respectfully submitted,
SIGNATURE 

TYPED or PRINTED NAME

Bhupinder RandhawaREGISTRATION NO.
(if appropriate)47,276

Docket Number:

13847-3

TELEPHONE

416-364-7311**USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT**

This collection of information is required by 37 CFR 1.51. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 8 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop Provisional Application, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

FEE TRANSMITTAL for FY 2004

Effective 10/01/2003. Patent fees are subject to annual revision.

 Applicant claims small entity status. See 37 CFR 1.27TOTAL AMOUNT OF PAYMENT (\$)
80.00

Complete if Known

Application Number	n/a
Filing Date	n/a
First Named Inventor	Ritz
Examiner Name	n/a
Art Unit	n/a
Attorney Docket No.	13847-3

METHOD OF PAYMENT (check all that apply)

Check Credit card Money Order Other None
 Deposit Account:

Deposit Account Number	022095
Deposit Account Name	Bereskin & Parr

The Director is authorized to: (check all that apply)

- Charge fee(s) indicated below. Credit any overpayments
 Charge any additional fee(s) or any underpayment of fee(s)
 Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.

FEE CALCULATION

1. BASIC FILING FEE

Large Entity	Small Entity	Fee Code (\$)	Fee Code (\$)	Fee Description	Fee Paid
1001 770	2001 385			Utility filing fee	
1002 340	2002 170			Design filing fee	
1003 530	2003 265			Plant filing fee	
1004 770	2004 385			Reissue filing fee	
1005 160	2005 80			Provisional filing fee	80.00
SUBTOTAL (1)		(\$)		80.00	

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

Total Claims	Independent Claims	Multiple Dependent	Extra Claims	Fee from below	Fee Paid
	- 20 ** =		X		0.00
	- 3 ** =		X		0.00

Large Entity	Small Entity	Fee Description
1202 18	2202 9	Claims in excess of 20
1201 86	2201 43	Independent claims in excess of 3
1203 290	2203 145	Multiple dependent claim, if not paid
1204 86	2204 43	** Reissue independent claims over original patent
1205 18	2205 9	** Reissue claims in excess of 20 and over original patent
SUBTOTAL (2)		(\$) 0.00

** or number previously paid, if greater; For Reissues, see above

3. ADDITIONAL FEES

Large Entity Small Entity

Fee Code (\$)	Fee (\$)	Fee Code (\$)	Fee (\$)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for ex parte reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	420	2252	210	Extension for reply within second month	
1253	950	2253	475	Extension for reply within third month	
1254	1,480	2254	740	Extension for reply within fourth month	
1255	2,010	2255	1,005	Extension for reply within fifth month	
1401	330	2401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	
1403	290	2403	145	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,330	2453	665	Petition to revive - unintentional	
1501	1,330	2501	665	Utility issue fee (or reissue)	
1502	480	2502	240	Design issue fee	
1503	640	2503	320	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	770	2809	385	Filing a submission after final rejection (37 CFR 1.129(a))	
1810	770	2810	385	For each additional invention to be examined (37 CFR 1.129(b))	
1801	770	2801	385	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify) _____

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$)

0.00

SUBMITTED BY

Name (Print/Type)	Bhupinder Rendhawa	Registration No. (Attorney/Agent)	47,276	Telephone (416) 364-7311
Signature	<i>Bhupinder Rendhawa</i>		Date	February 2, 2004

(Complete if applicable)

WARNING: Information on this form may become public. Credit card information should not be included in this form. Provide credit card information and authorization on PTO-2038.

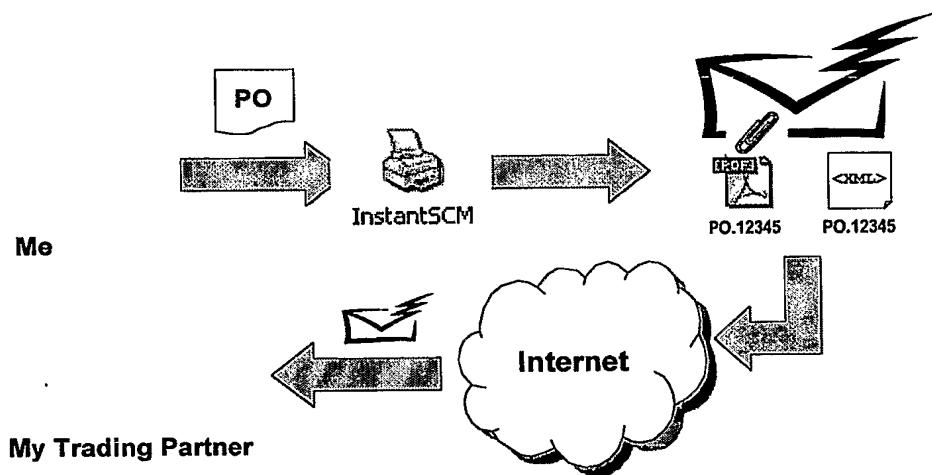
This collection of information is required by 37 CFR 1.17 and 1.27. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Provisional Patent Application

InstantSCM

January 2004



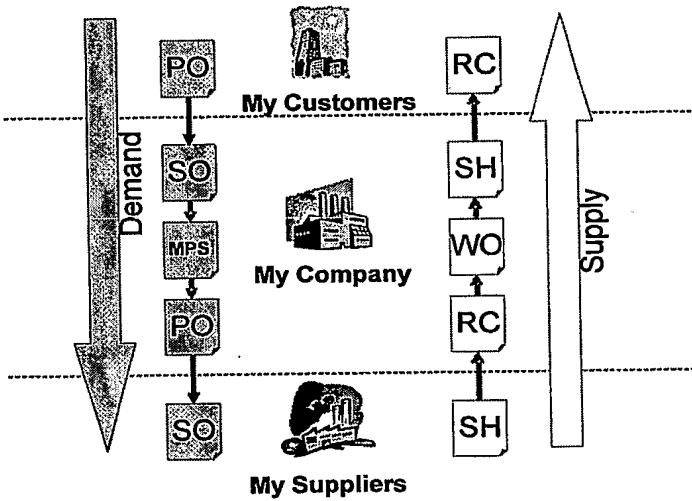
Contents

<u>Overview</u>	1
<u>Background</u>	1
<u>What is Supply Chain Management?</u>	1
<u>How is SCM Done Today?</u>	2
<u>What are the Challenges?</u>	3
<u>What does InstantSCM do?</u>	4
<u>How does InstantSCM do it?</u>	5
<u>“Print” the business document to the client façade program</u>	6
<u>Catalogue the documents in the local database</u>	7
<u>Post the documents to the InstantSCM service</u>	7
<u>Forward the documents to the trading partner</u>	7
<u>Receive the forwarded documents</u>	8
<u>Catalogue the received documents in the local database</u>	8
<u>Optional processing of the inbound XML file</u>	9
<u>The complete audit trail</u>	9
<u>System Architecture</u>	10
<u>Client-side Applications</u>	10
<u>Server-side Software</u>	10
<u>Channel Partner Applications</u>	11
<u>InstantSCM Client Application</u>	13
<u>Overview</u>	13
<u>Outbound Document Transmission</u>	14
<u>Inbound Documents</u>	17
<u>System Administration</u>	19
<u>InstantSCM Service</u>	21
<u>Overview</u>	21
<u>Address Lookup Request</u>	21
<u>Transmission</u>	21
<u>“Coat Check”</u>	22
<u>Document Validation</u>	23

Overview

Background

What is Supply Chain Management?



A supply chain is the chain of entities through which a company receives orders for its goods or services from customers, and by which it satisfies those orders. A supply chain may also include one or more suppliers to the company, with whom the company places orders for goods or services required to satisfy orders received from customers.

Supply chains are constructed from 3 essential elements:

1. The Company
2. The Company's Customers
3. The Company's Suppliers.

A supply chain has 2 size metrics: depth and breadth. Breadth is a measure of how many customers and suppliers the company has. Depth is a measure of how far above and below the company the "supply chain" extends. How many levels above

does the chain go (the customer's customer's customer... etc.) and how many levels below (the supplier's supplier's supplier)?

The archetypal industrial process is:

1. The company buys goods from a supplier,
2. The company adds value inside its own four walls, and
3. The company sells the value-added goods to its customer.

Demand is communicated to the company by its customers, typically by a Purchase Order (PO) to indicate the goods and services they want. The PO is the customer's document of record for the transaction. The company's document of record, which is *its* reflection of the same transaction, is a Sales Order (SO).

The SO introduces demand to the company's Master Production Schedule (MPS). This schedule may require the company to buy goods from one or more of its suppliers. The buy/sell process is recursive; the company's PO to its supplier is reflected by the supplier's SO to the company.

A supplier ships the company the goods/services ordered from it. The supplier's Shipper (SH) is the document of record around the fulfillment side of the transaction. The company's document of record, the reflection of the supplier's Shipper, is the Receiver (RC). The RC represents fulfillment of the transaction denoted by the company's PO.

Goods received against the RC may be consumed on the shop floor by work orders (WO) that the company has launched to fulfill the MPS. The finished items made under the WO are sent to the company's customer. The company creates a Shipper, which is the fulfillment of the transaction denoted by the company's SO.

The goods are shipped. The customer's reflection of the transaction is its Receipt (RC). The customer's RC is the transaction document that fulfills its PO.

When the company sends an invoice to the customer, it will be cross-matched to the customer's RC, to the company's SH & SO, and to the customer's PO. This 4-way match confirms that:

1. The invoice is billing the customer for the goods or services the customer actually received.
2. The customer received the goods or services that were supposed to be received, based on the customer's PO.
3. The financial terms of the invoice are consistent with those expressed on the customer's PO.

If the 4-way match is successful, the customer pays the company. When a supplier sends an invoice to the company, it goes through the exact same procedure to "voucher" it against the company's documents of record.

How is SCM Done Today?

For decades, large enterprises have used electronic data interchange (EDI) to execute online transactions with other large companies. EDI, however, is expensive and difficult to implement – and so is only used by 2% of businesses worldwide. This represents the heart of the problem: 98% of businesses are not able to execute eCommerce transactions. As with any other chain, a supply chain is only as strong as its weakest links.

Today, companies typically order products by phone, fax or mail. These largely manual processes are slow, expensive and prone to errors. Data is re-keyed at each

stage in the value chain, introducing significant non-value-added workloads into the business processes of both trading partners. A recent study by International Data Corp. (IDC) found that 1 in 9 business transactions go wrong; and it costs 300% more to resolve these issues than it would have to execute the transaction correctly.

Even when the transaction goes through error-free, the Organization for Economic Cooperation and Development (OECD) has estimated that the true cost to process a single purchase (inclusive of approval processes) is \$75 – \$150. Statistically:

- 40% of PO's are for non-production goods
- 95% of them are executed using paper-based processes
- On average, there are 39 steps in a traditional PO process
- Only 30 percent of the effort is on "strategic" activities; the other 70% of the effort is paperwork and non-value-added manual processes

What are the Challenges?

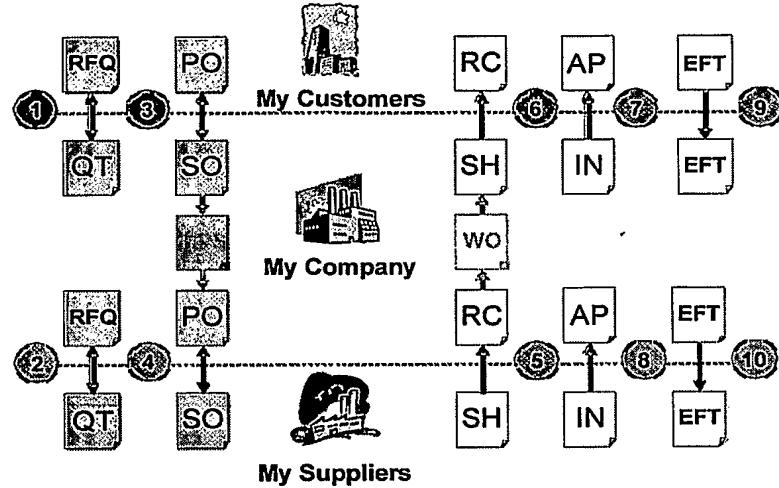
This problem is big, and it's painful – painful to both large companies and the small to medium-sized enterprises (SMEs) that want to do business with them. It's also important. Companies that collaborate well with their supply chains are winning. And they're winning at the expense of those that can't get their SCM act together. Supply Chain Management is something a company *has* to be good at in order to succeed in today's market.

Solving the business collaboration puzzle has proved a daunting task. Daunting because of the sheer number of pieces that make up the puzzle. There are literally thousands of different business systems in use. And integrating them is "heavy lifting". It is costly and time consuming. So much so, that even the most connected enterprises typically have less than 20% of their trading partners "online".

A solution must be found that:

- leverages the eCommerce investments already made by large companies
- is universally available to large and small companies alike
- is inexpensive, both to deploy and to operate
- supports a win-win; is beneficial to both buyers and sellers
- is secure, verifiable and auditable

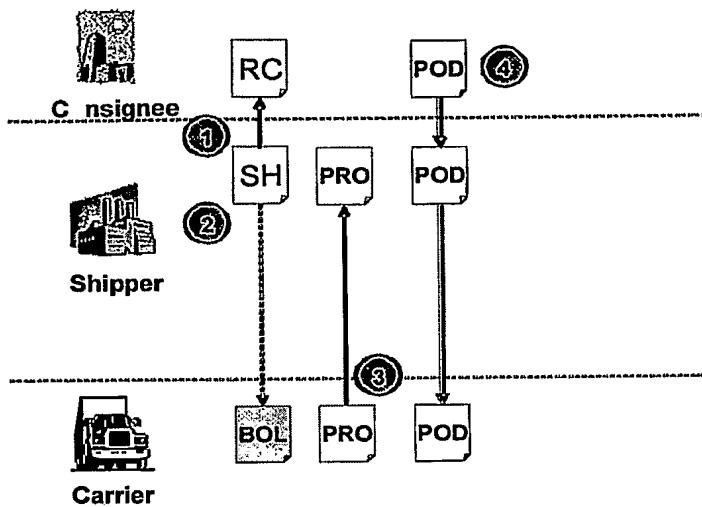
What does InstantSCM do?



The core functionality of InstantSCM is designed to support the buy-sell transaction. The functional footprint for this may be described as follows:

1. Receive an incoming request for a quote (RFQ) from customer. Send Quote in reply.
2. Send RFQ(s) to supplier(s). Receive Quote(s) in reply.
3. Receive incoming Purchase Order from customer. Send Sales Order Acknowledgement in reply
4. Send Purchase Order to supplier. Receive reply SO Acknowledgment from supplier.
5. Receive Shipper from supplier
6. Send Shipper to customer
7. Send Invoice to customer
8. Receive Invoice from supplier
9. Receive electronic funds transfer (EFT) advice from customer.
10. Settle supplier's Invoice with EFT

InstantSCM also natively supports the logistics functions – the 3rd party interactions that support the physical movement of inventory between trading partners.



The logistics functionality may be described as follows:

1. The Shipper prints a Packing Slip (SH), which is sent via InstantSCM to the Consignee to feed the Consignee's Receiver (RC). This interaction is described in workflow steps 5 & 6 (above).
2. A Bill of Lading (BOL), similar to the SH but with lading units, is sent to the Shipper's 3rd party Carrier. The BOL serves as a "purchase order" for the freight services that the Shipper wishes to have provided by the Carrier.
3. The Carrier assigns a control number (Probill #) to the BOL, rates and schedules it, creating a freight bill (PRO). The PRO is sent to the Shipper. The PRO serves as a "sales order acknowledgement" of the freight services that will be provided by the Carrier to the Shipper.
4. The goods are transported, by the Carrier, from the Shipper to the Consignee. As a proof of delivery (POD), the Consignee may send a digitally signed copy of the SH to both the Shipper and the Carrier. This POD provides an electronic version of the hand-signed freight bill. This electronic document may be used by both the Shipper and the Carrier to feed their invoicing workflows.

How does InstantSCM do it?

The InstantSCM system and service method provides a document exchange infrastructure between trading partners. It facilitates the supply chain transaction and adds value by providing a secure transmission mechanism that lays down an identical audit trail in both trading partners' local databases.

The process may be illustrated through a sample document transmission. In this example, Company X will send a purchase order to its trading partner: Company Y.

Generically, the process may be described as follows:

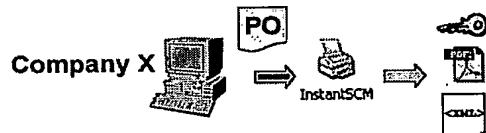
1. An operator at Company X submits a business document to the InstantSCM client program.
2. A human-readable copy of the business document is created, along with a machine-readable copy of the document's data content. The data content is

analyzed to derive a document key file that will be employed to catalog the other two files.

3. A transmission record is saved and the files are stored in a local database as per the document key file.
4. The human and machine-readable files are submitted to the InstantSCM service. The service creates a timestamped billing log of the transmission and saves a digital hash of each file in the transmission.
5. The InstantSCM service routes the files to a destination email recipient based on the document's data content. Data encryption mechanisms are employed to secure the transmission.
6. At the recipient's computer, the InstantSCM client program is invoked to process in the inbound email payload. The transmission record is saved and the files are stored in a local database as per the document key file. This creates a local audit trail at the recipient's computer that is identical to that created at the sender's computer. Also, upon the saving of the local record, a log is posted to the InstantSCM service that records a timestamped audit trail of the transmission receipt.

The InstantSCM system and service method may be constructed from many generic "puzzle pieces". For illustrative purposes, in this example it will be assumed that the InstantSCM client program is invoked through a "virtual printer" to which an operator can send a business document by simply printing it from his/her standard business management software program. Likewise, although any human-readable file format can be employed, it will be assumed for purposes of this illustration that an Adobe PDF file is created by the InstantSCM client program. Similarly, although any appropriate tagged data file structure could be employed for the "machine-readable" attachment – for this example an XML file will be assumed. In the face of these assumptions, the example process can be described as follows:

"Print" the business document to the client façade program

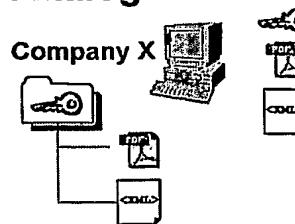


Locally, X prints its Purchase Order to the InstantSCM "printer". The InstantSCM application intercepts the printer data and creates three files:

- an XML-based "key" file indicating how this file should be catalogued
- a PDF of the Purchase Order
- an XML file with the Purchase Order's data



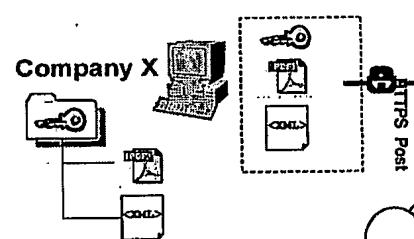
Catalogue the documents in the local database



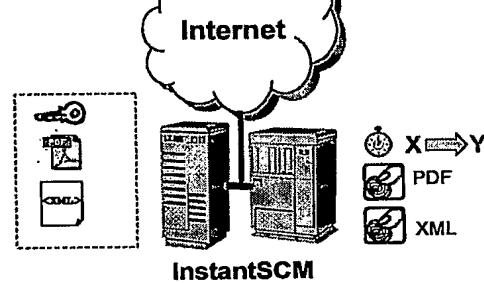
The PDF and XML files are stored locally in Company X's InstantSCM database as indicated by the "key" file.



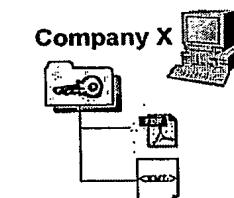
Post the documents to the InstantSCM service



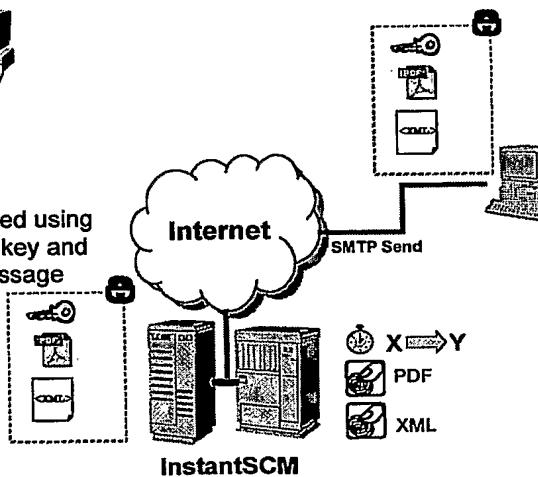
The files are zipped and sent to the InstantSCM service over a secure socket layer (SSL) connection. There, a billing audit record is logged of the transmission and its participants. A digital fingerprint is saved of the PDF and XML files.



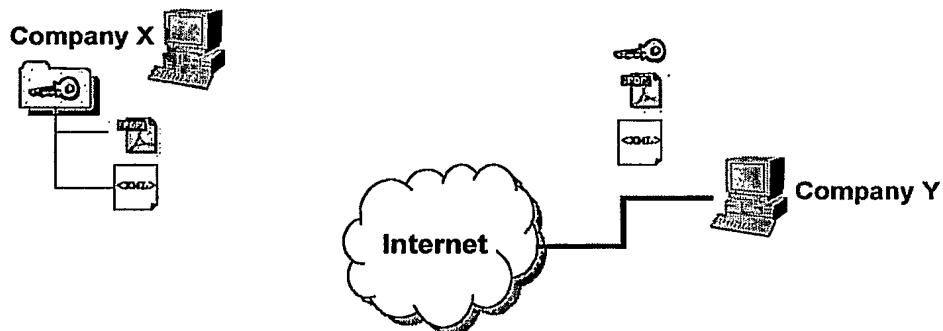
Forward the documents to the trading partner



The files are encrypted using Company Y's public key and sent as an email message using SMTP.

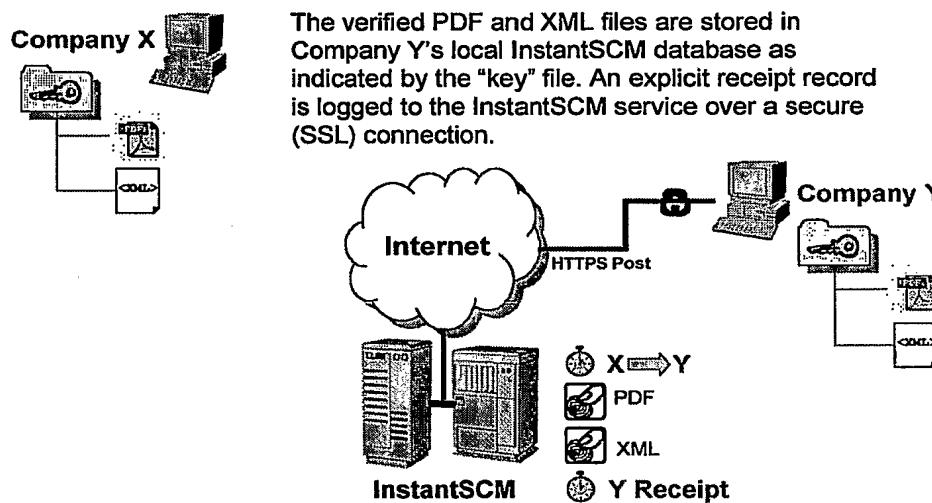


Receive the forwarded documents

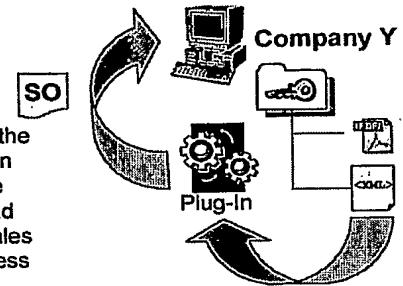
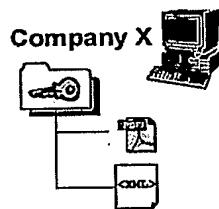


The files are unzipped and decrypted using Company Y's private key.

Catalogue the received documents in the local database

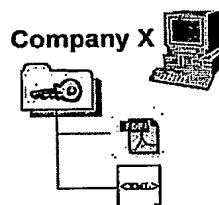


Optional processing of the inbound XML file



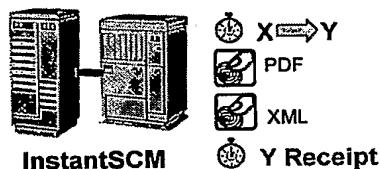
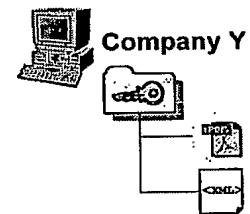
A "plug-in" program may optionally be invoked after the XML and PDF documents have been stored locally in Company Y's database. The plug-in can process the inbound XML file (Company X's Purchase Order) and create the appropriate document – in this case, a Sales Order – for automatic entry into Company Y's business management system.

The complete audit trail

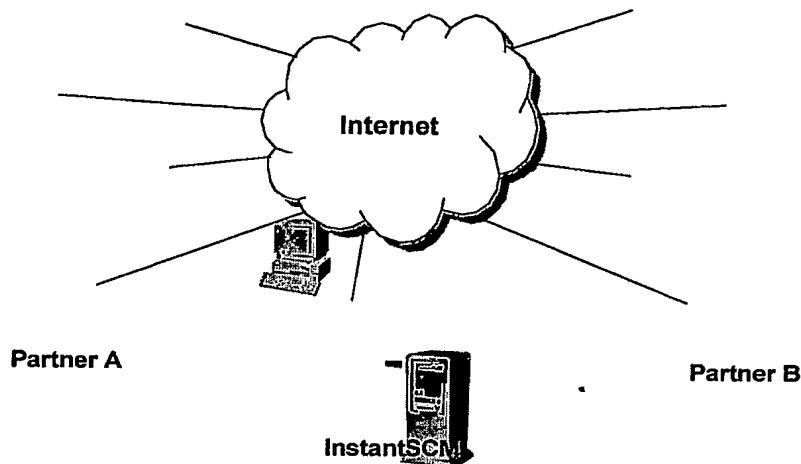


When it's finished...

- X and Y have identical "audit trails" in their local databases, catalogued using the same keys.
- InstantSCM has a timestamped log of both the transmission and its receipt which provides non-repudiation of the documents that were exchanged.



System Architecture



InstantSCM may be implemented using any technology that allows trading partners and channel partners to communicate with one another and with the InstantSCM service in electronic form. For example, the different entities may communicate using direct or indirect connections, e-mail, the Internet, a WAN or another type of communication network. In the present example, the communication mechanism is deployed as an Internet-wide service.

Although the product will be marketed by many Channel Partners (Partner A and Partner B, shown above), trading partners who subscribe to the InstantSCM service will use the same core service for sending/receiving transmissions regardless of who supports the billing relationship.

Client-side Applications

A subscriber is a business entity that employs the InstantSCM service for sending and receiving supply chain document transmissions. Each subscriber to the InstantSCM service locally installs the InstantSCM application, which in this example is a virtual "printer" application. The InstantSCM "printer" may be shared by a workgroup on a local area network (LAN).

The InstantSCM client program provides:

- parsing and transmission of outbound documents
- filing of inbound documents in a local database, including optional plug-in support
- data analysis
- system administration, including PKI certificate management as required

Server-side Software

The Internet-based InstantSCM service is basically a document logging and forwarding application. The InstantSCM service provides:

- logging of transmission participants (for billing)
- digital fingerprinting of inbound documents

- caching of outbound documents to non-subscribers
- forwarding of outbound documents to subscribers via secure SMTP
- storage of subscriber preferences
- authentication/non-repudiation services for subscribers' local documents

Channel Partner Applications

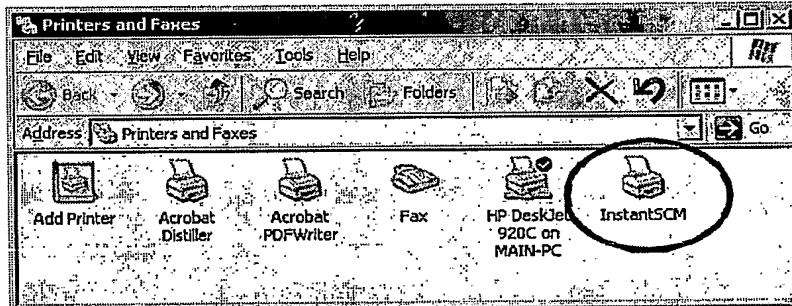
The InstantSCM Channel Partners are the marketing, sales and first-line tech support providers. The Channel Partners provide:

- a downloadable version of the InstantSCM client program
- a "signup page" for the InstantSCM service
- invoicing/billing of subscribers based on their document transmission traffic
- a technical support help desk for the InstantSCM product.

InstantSCM Client Application

Overview

The InstantSCM client application will install locally on the Windows desktop. In the case where the client application is fronted by a “virtual printer” façade, to the Windows operating system, the application may appear to be a printer.



The application will operate under 32-bit Windows operating systems (Win9x, WinME, Win2K, and WinXP). Architecturally, it will be comprised of:

- Printer façade components – one per outbound document type: RFQ, PO, SO, Shipper, Invoice
- PDF generator component
- Printer data stream parser component
- Peer-to-Peer messaging service
- Simple HTA-based user interface
- MSXML and MDAC components
- Small-footprint database (MS Jet4)
- X509 digital certificate

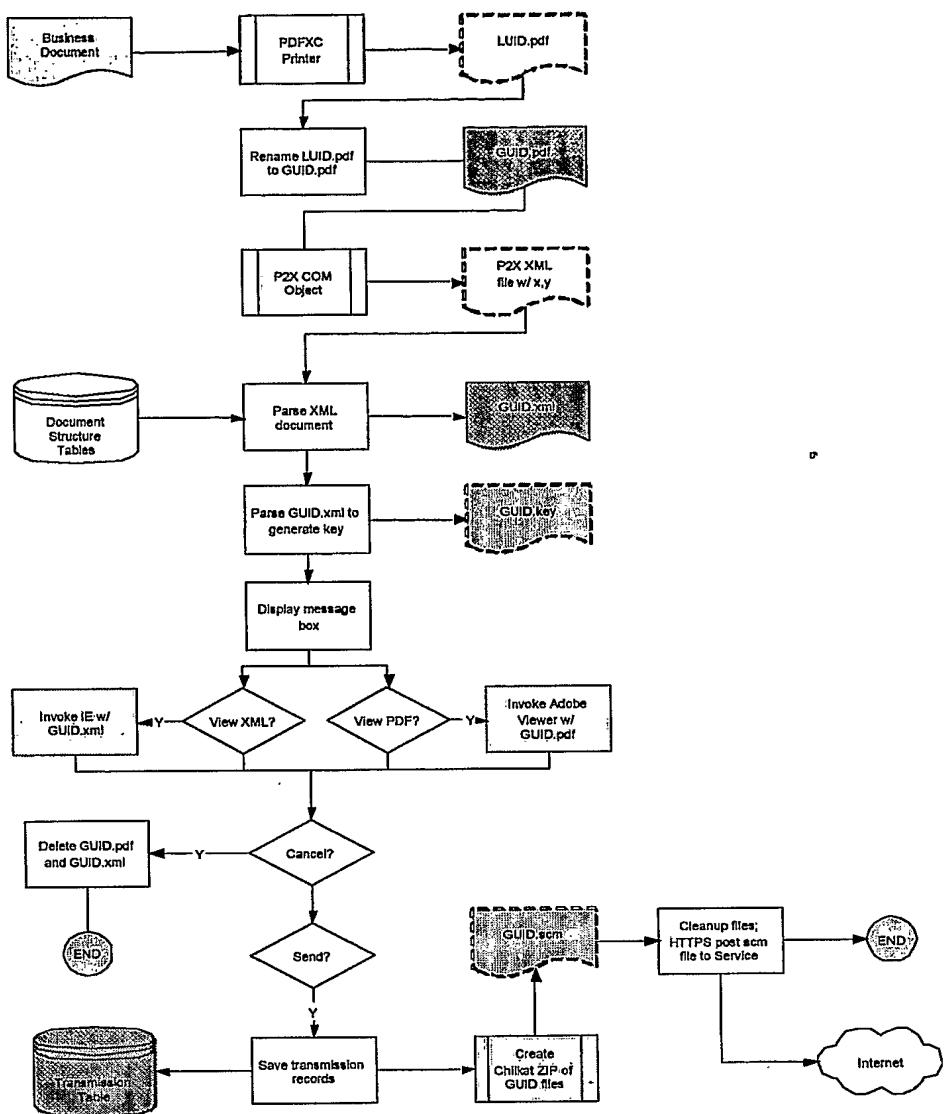
The client application will not require a constant connection to the Internet. It will, however, need to be connected to the Internet whenever a document is “printed”.

Outbound Document Transmission

As a detailed example, the client processing of an outbound document may be described as follows:

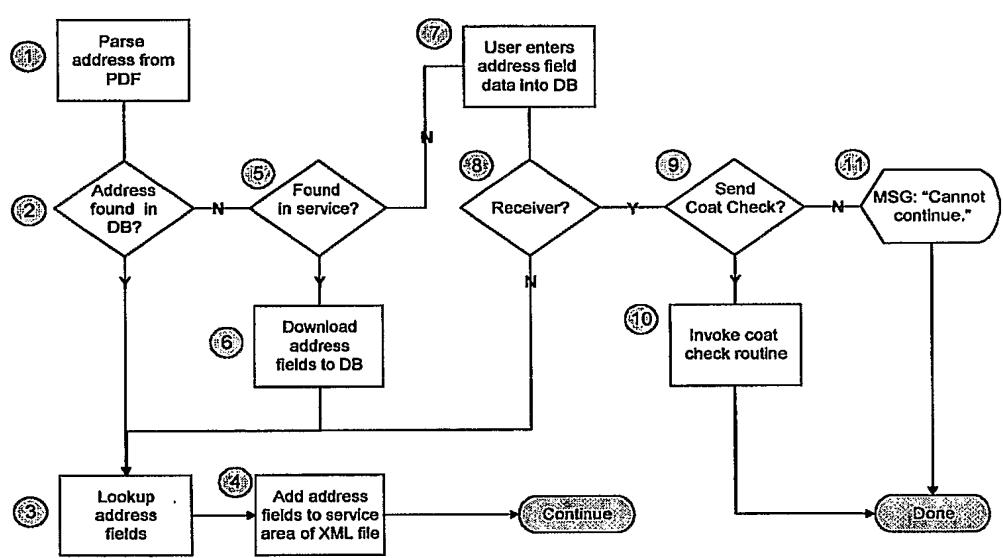
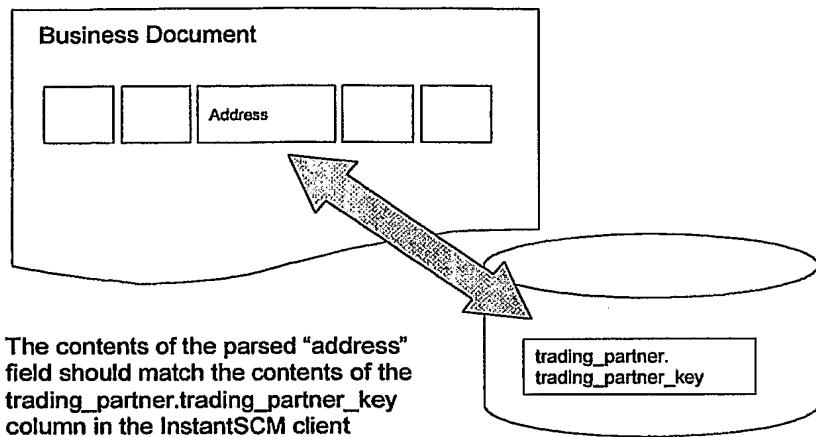
1. Third party application prints to the InstantSCM printer façade (PDFXC). The façade generates a locally unique identifier (LUID) filename, stores the PDF file in a temporary directory, and invokes the parser program with LUID.pdf passed as a command line argument.
2. The parser renames LUID.pdf with a globally unique identifier (GUID.pdf) and copies the file to the InstantSCM directory.
3. The parser then invokes the PDF to XML (P2X) COM object, passing it the GUID.pdf file. P2X creates an XML file containing extracted text strings along with the x and y coordinates of each text element's position on the printed page.
4. The parser processes the P2X text file, and uses the document structure map defined in the InstantSCM database to process the extracted PDF document content into an XML file. This XML content file is saved using the same GUID as the PDF document: GUID.xml. Upon completion, the P2X XML file is deleted.
5. The contents of the GUID.xml file are analysed to create a “key file”: GUID.key. The GUID.key file contains the document control information (eg. Purchase Order number, Invoice number, etc.) indicating how the PDF and XML files should be catalogued in the InstantSCM transmission log.
6. A simple user interface (UI) is invoked to provide the user with options to View PDF, View XML, Cancel transmission or Send.
7. The “View PDF” option invokes Acrobat Reader, passing the GUID.pdf file name as a command line argument.
8. The “View XML” option invokes Internet Explorer, passing the GUID.xml file name as the command line argument.
9. The “Cancel” option deletes all generated files (GUID.pdf, GUID.xml and GUID.key) and exits.
10. The “Send” option executes the document transmission sequence:
 - a. A transmission record is saved to the transmission log
 - b. The 3 GUID files are compressed into a single “ZIP” file
 - c. An HTTPS POST is executed to submit the ZIP file payload to the InstantSCM service for forwarding to the destination trading partner.
 - d. Appropriate “garbage collection” is done after the transmission is sent, deleting the ZIP and the key files.

This process is illustrated by the graphic shown below.



The process is slightly different if there is no match found in the InstantSCM database for the address of the destination trading partner. In this case, there is a search executed against the InstantSCM service to try to find a match in the global subscriber list. If no match is found, the user has the option of sending a "coat check" transmission to the destination trading partner, inviting him to sign up for the service so that he can receive the intended business document.

This process is illustrated by the graphics shown below.

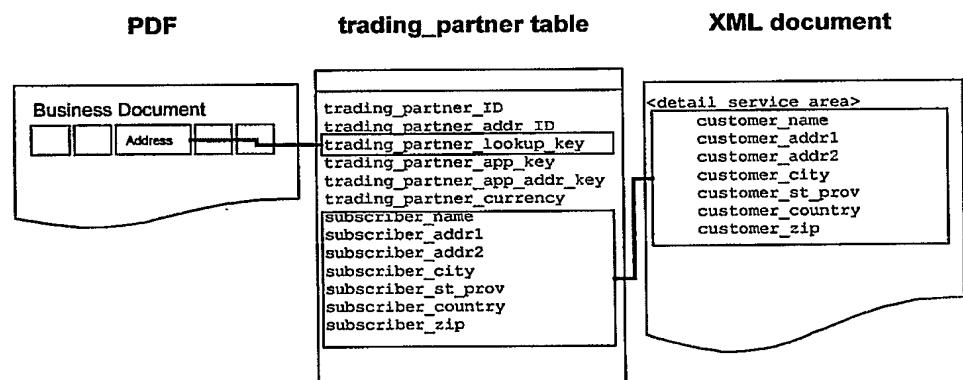


The processing logic may be described as follows:

1. The content of the business document is parsed.
2. The address portion of this content is used to determine the destination trading partner by comparing it to the addresses on file in the InstantSCM client database.
3. If a match is found, the address elements (name, street, city, province, etc.) are retrieved from the database.
4. These address elements added to the “service area” of the XML document.
5. If no address match is found in the local database, a search is made of the addresses on file in the InstantSCM service’s subscriber database.
6. If a match is found, it is downloaded and saved as a record in the local client database.

7. If no match is found on the service, the user may optionally enter the address information into the local database.
8. If this address is referenced in the document, but is not the address of the intended recipient trading partner, then the document transmission may continue.
9. If the manually entered address is that of the intended document recipient, then a “coat check” transmission may be sent to this trading partner. The purpose of a coat check is to inform the trading partner that there is a business document waiting for them to pick up, once they subscribe to the InstantSCM service.
10. If the user so chooses, a coat check message is sent to the intended trading partner’s email address (which is provided by the user).
11. If the user chooses not to send a coat check, then the transmission cannot be sent. It is not possible to send a document to a trading partner recipient who has not signed up as a subscriber on the InstantSCM service.

The graphic shown below illustrates the relationship between the parsed address from the business document, the trading partner list on the local client database, and the eventual XML version of the business document.

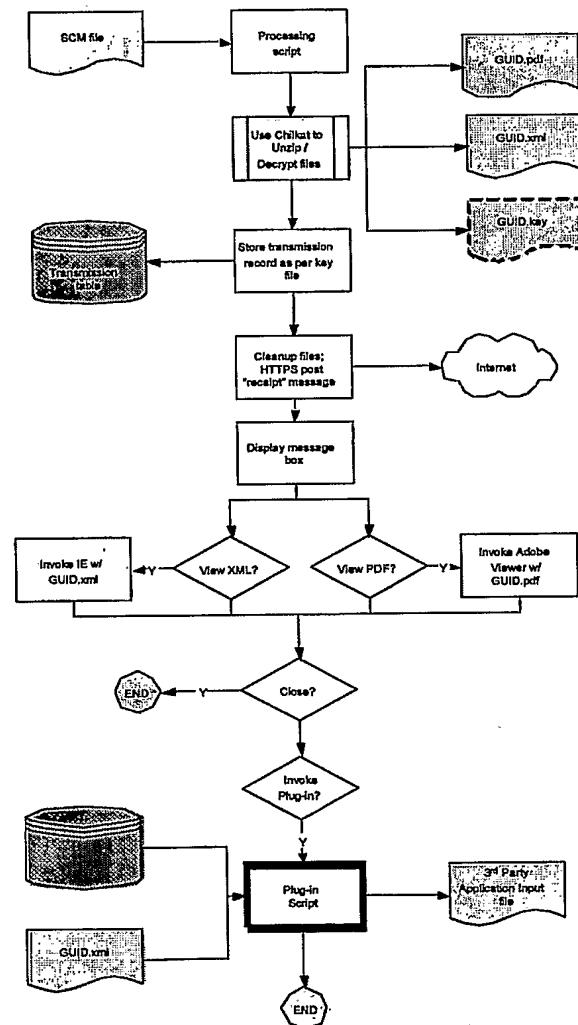


Inbound Documents

InstantSCM transmissions will be received via email, or some other standard messaging service. In the following example, the email file attachment will have a “.SCM” file extension. Upon installation, the InstantSCM printer façade application will register itself as the “owner application” for the .SCM file type. Using this premise, the process for receiving inbound document transmissions may be described as follows:

1. User receives email with attachment. A double click of the email attachment invokes the façade program.
2. The attachment is unzipped. The 3 files (pdf, xml and key) are stored in the InstantSCM directory.
3. Based on the contents of the key file, the appropriate transmission audit records are inserted into the database.

4. The GUID.key file is deleted and a “receipt” message is posted (HTTPS Post) to the InstantSCM service using a secure socket layer (SSL).
5. A message box is displayed with 4 options: View PDF, View XML, Invoke Plug-in, and Close.
6. On selecting View PDF, the Adobe Acrobat Reader is invoked with the GUID.pdf file passed as a command line argument. The message box remains open.
7. On selecting View XML, Internet Explorer is invoked with the GUID.xml file passed as a command line argument. The message box remains open.
8. On selecting Invoke Plug-in, the plug-in program (as defined in the client database table) is invoked with the GUID passed as a command line argument. The message box closes.
9. On selecting Close – the message box closes.



If a user receives a “coat check” transmission, it will include instruction on how to download the InstantSCM application and a “click-through” to an InstantSCM channel partner with whom they can subscribe to the service. Once they have downloaded and installed a local copy of the façade program, the new subscriber can receive the business document referenced by the “coat check”.

System Administration

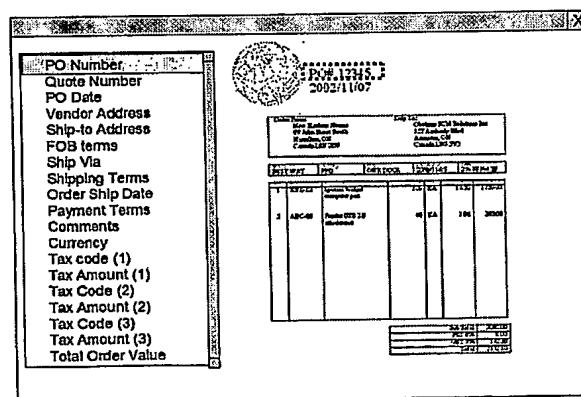
The InstantSCM client application will also provide a rudimentary user interface that will support the following system administration activities:

- Create/Manage company profile information
- Create/Manage user authorization and security
- Create/Manage document maps
- Create/Manage custom document types
- Query the database
- Generate management reports from the database
- Backup/Restore the database

Create/Manage Document Maps

System Administrators can manually create or edit a document map that can then be saved in the InstantSCM database. A document mapping tool is used to associate tags defined in an XSD (XML Schema Definition) file with geographic areas on a printed report page.

Document maps are basically geographic descriptions of the landscape of a paper document. Once the “locations” of text elements are established, then the parser can determine what information would have been printed at that location and appropriately tag it with metadata indicating the content (eg. <po_num> or <vendor_address>). Simple rules will be applied that help determine when a “new detail line” occurs by looking for line item numbers or item part numbers etc., in their appropriate columns in the body of the document.



To create a document map, a user would execute the following:

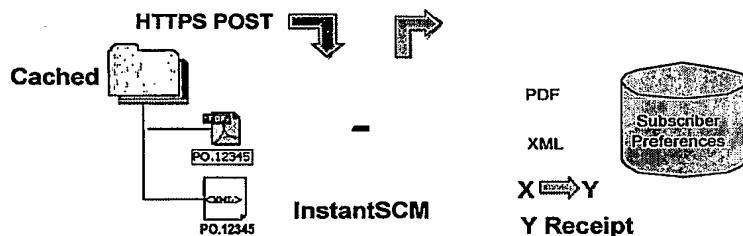
1. The system administrator-level user would print a copy of the document to the “document mapper printer”. A visual copy of the document is presented on the screen.
2. The user is prompted to indicate the *document regions* of the document by using the mouse to draw a box around the header, body and footer of the report.
3. The user then is asked, in turn, to use his mouse to draw a box around each of the data elements necessary to fulfill the document schema as defined in the XSD. The list of data elements comes from the XSD. As each data field region is defined, a record is inserted into the document_field_map table in the client database indicating the region on the report where this content is printed.
4. Lastly, the user is prompted to indicate the “trigger area”. This is the area on the document that indicates a new line number.
5. Once all the document “geography” is mapped, the user is able to test the map by parsing “test documents” and scrutinizing the results. A map must validate correctly against the XSD before documents of the document_type can be printed to the InstantSCM printer.

InstantSCM Service

Overview

The Internet-based InstantSCM service is an email logging and forwarding application. The InstantSCM service provides:

- logging of transmission participants (for billing)
- digital fingerprinting of inbound documents
- caching of outbound documents to non-subscribers
- forwarding of outbound documents to subscribers
- storage of subscriber preferences
- authentication service for subscriber's local documents



Address Lookup Request

Upon receipt of a Fuzzy Search Request, the service will:

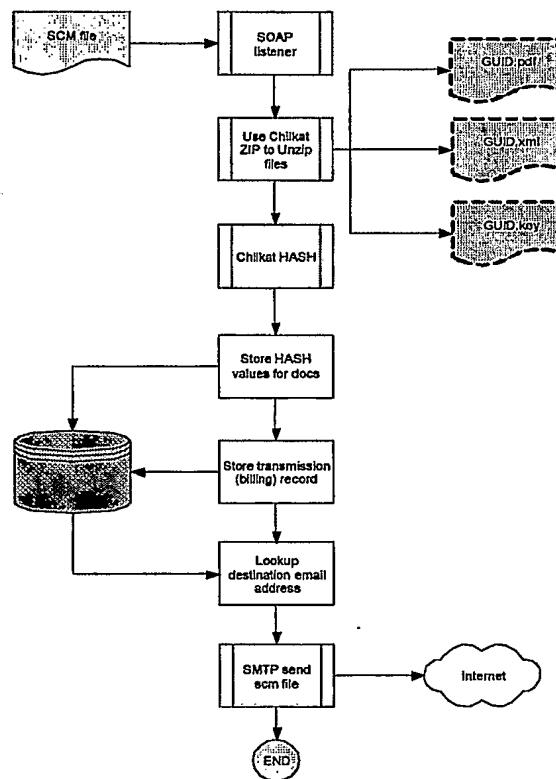
1. Invoke the text search component to lookup the subscriber GUID based on the address in the XML payload.
2. Return all matches in an XML response document.

Transmission

Upon receipt of a document transmission payload to be forwarded to a subscriber destination address, the service will:

1. Receive inbound HTTPS post (SOAP package).
2. Unzip attached files.

3. Calculate digital HASH of each file using SHA.
4. Store “digital fingerprints”, billing record and KEY XML file in the database.
5. Based on the key file (subscriber GUID), lookup the destination email address from the subscriber database.
6. Use SMTP to send the original attachment to the destination email address.



“Coat Check”

Upon receipt of a document transmission from a non-subscriber (based on the results of a fuzzy search as indicated) the service will:

1. Save the file attachments to the document cache
2. Build the “coat check ticket” email
3. Forward the coat check ticket to the destination email address provided in the transmission payload

Document Validation

Upon receipt of a document validation request the service will:

1. Receive a SOAP packet containing a digital fingerprint and the GUID of the document for which this fingerprint is being validated.
2. Lookup the transmission record
3. Retrieve the digital fingerprint from the database record of this document GUID
4. Compare the fingerprints and return a success or fail code to the calling application as a SOAP response.

Patent Application Data Sheet

Application Information

Application Type:: Provisional

Subject Matter:: Utility

Title:: SUPPLY CHAIN MANAGEMENT SYSTEM

Attorney Docket Number:: 13847-3

Small Entity?:: Yes

Applicant Information

Inventor Authority Type:: Inventor

Primary Citizenship

Country:: Canada

Status:: Full Capacity

Given Name:: Derek

Middle Name:: J.

Family Name:: Ritz

Name Suffix::

City of Residence:: Ancaster

State or Prov. Of

Residence:: Ontario

Country of Residence:: Canada

Street of mailing address:: 157 Amberly Blvd.

City of mailing address:: Ancaster

State or Province of

mailing address:: Ontario
Country of mailing address:: Canada
Postal or Zip Code of
mailing address:: L9G 3V3

Correspondence Information

Correspondence Customer

Number:: 001059
Phone Number:: 416-364-7311
Fax Number:: (416) 361-1398
E-Mail Address:: brandhawa@bereskinparr.com

Representative Information

Representative	
Customer Number::	001059